

EXHIBIT F

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1 wires as they are twisted. When the conductors of more than one wire are secured
2 in this manner, electrical current freely passes between the joined wires.

3 30. Twist connectors are multiple use connectors and can be easily
4 removed to allow wires to be separated after installation. Common twist connectors
5 are shown below.



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**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA**

DS ADVANCED ENTERPRISES,
LTD., a corporation,

Plaintiff,

v.

LOWE'S COMPANIES, INC., A
CORPORATION,

Defendant.

Case No. 3:23-cv-01335-CAB-JLB

**DECLARATION OF DR. ERIC
BRETSCHNEIDER**

I, Eric Bretschneider, do hereby declare and state as follows:

BACKGROUND AND QUALIFICATIONS

1. I submit this declaration in support of Lowe's Home Center's Motion
for Summary Judgment of No Infringement.

2. I have over 30 years of experience with lighting and LEDs, including a
comprehensive background on the full range of LED production technologies,
including substantial experience in product development, package design, and
manufacturing.

1 3. I have a Ph.D. in chemical engineering from the University of Florida,
2 with a focus on the development of optoelectronic devices.

3 4. Since 2014, I have been the Chief Technology Officer at EB Designs &
4 Technology. In that capacity, I am (among other things) responsible for the design
5 of solid-state lighting technologies for clients ranging from startups to Fortune 100
6 companies.

7 5. I previously served as a member of the University of Florida
8 Department of Chemical Engineering Advisory Board from 1998 until 2023. I have
9 been a Conference Chair for LED Measurement and Standards. I am also a member
10 of a number of professional societies, including SPIE, Materials Research Society,
11 Illuminating Engineering Society (I am a member of the Science Advisory Panel as
12 well as a member of numerous committees, most notably the IES Test Procedures
13 Committee where I chair the Solid-State Lighting subcommittee).

14 6. Prior to my position at EB Designs & Technology, in 2013-2014, I
15 served as the Director of Engineering at HeathCo, LLC. In that capacity, I was
16 responsible for advanced technology/product development related to solid state
17 lighting, sensors, notifications, and control products.

18 7. Prior to my position as Director of Engineering at HeathCo, between
19 2011 and 2013, I was positioned at the Elec-Tech International Co., Ltd., where I
20 held the positions of Chief Engineer, ETi Lighting Research Institute and VP of
21 Research and Development, ETi Solid State Lighting. In that capacity, my
22 responsibilities included developing all technology and product roadmaps for
23 markets in North America, China, Europe, and Japan.

24 8. Between 2008 and 2011, I was positioned at Lighting Science Group
25 Corp., first as a product development manager, and my responsibilities included
26 developing solid state lighting products, then as VP of Research, and my
27 responsibilities included developing advanced LED models for product development
28 and production control.

1 9. I have also authored and presented more than 50 times in this field, and
2 I am a named inventor on about 45 patents, many related to LED and light fixtures.

3 10. I earned my BSE in Chemical Engineering from Tulane University in
4 1989. I earned a Ph.D. in Chemical Engineering from the University of Florida in
5 1997, where my graduate work focused on development of optoelectronic devices,
6 including novel silicon based visible LEDs and sulfide based TFELD structures and
7 zinc selenide blue LEDs.

8 11. Based on the above education and experience, I believe that I have an
9 extensive and detailed understanding of the state of the art in LED lighting design
10 during the relevant period, as well as a sound basis for opining how persons of skill
11 in the art at that time of the alleged invention would understand the technical issues
12 in this case.

13 A copy of my curriculum vitae is attached hereto as **Appendix A**.

14 **THE LOWE'S HOUSING IS COMMON PLASTIC**

15 12. I have reviewed physical samples of several LED light fixture products
16 of LHC, specifically Utilitech SKUs #5041630, #5041631, #5041632, #5041633,
17 and #5041634.

18 13. I was asked to determine the makeup of the housing of those fixtures.

19 14. My review showed, unequivocally, that the housings are all comprised
20 of common thermoformable plastic materials. This is evident from any physical
21 inspection of the products.

22 15. To further confirm these housings are plastic, I took apart the units.
23 There are clear imprints from tool marks from the machining of the injection mold
24 which would only show up for injection molded plastic parts.

25 16. Injection molded plastic parts will include gate marks on one or more
26 surfaces. Gates are portions of the mold that allow molten thermoplastics to be
27 injected into the mold cavity and are closed prior to allowing the thermoplastic to
28

24. In summary, the small amounts of metallic elements detected by PIXE analysis are entirely consistent with a plastic housing with minor amounts of white filler materials. No person of skill in this art would ever confuse the thermoplastic housing of the LHC products with a metal housing.

THE LHC JUNCTION BOX HAS ONLY A SINGLE GROUND WIRE

25. The LHC junction box has a single wire, colored green and yellow.

26. A person of ordinary skill in the art would be know that wires can be constructed using a single (thick) conductor or multiple (thin) conductors. The choice of single or multiple conductors affects the flexibility of the wire with increasing numbers of strands resulting in more flexible wire that is less susceptible to work hardening.

27. Plaintiff identifies a wire with a green and yellow insulator which indicates its intended purpose is to function as a ground wire – a wire for safely discharging any excess electricity or voltage to the ground. This purpose is consistent with it being connected to the interior of the junction box with a lug terminal.

28. A person of ordinary skill in the art would understand output wires to be wires that conduct electricity to a component, in the present example, the LED module. For this reason, a person of ordinary skill in the art understands that the ground wire is not an output wire as it does not conduct electricity to the LED module.

TWIST CONNECTORS AND PUSH CONNECTORS

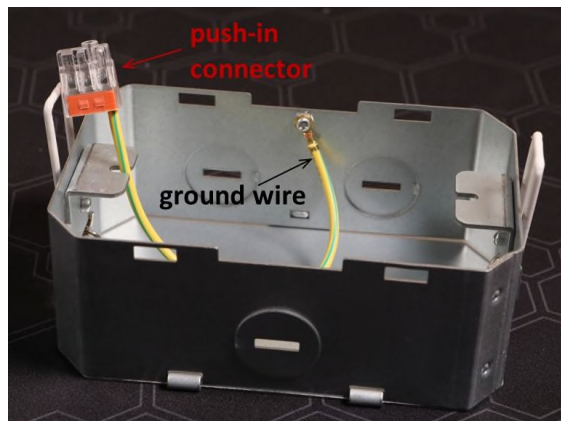
29. A twist connector is a very common mechanism for connecting two wires, which is “twisted” onto the stripped ends of wires. Twist connectors can also be called “wire twists,” or “wire nuts” (which also indicates the twisting action, like any nut would twist onto a bolt). These connectors are tapered and have internal conducting metal threads that cut into the surface of the conductors of one or more

wires as they are twisted. When the conductors of more than one wire are secured in this manner, electrical current freely passes between the joined wires.

30. Twist connectors are multiple use connectors and can be easily removed to allow wires to be separated after installation. Common twist connectors are shown below.



31. Another type of wire connector is a push-in wire connector. A push-in wire connector like that shown below, uses a tapered blade mechanism to secure and make electrical contact to the exposed conductors of wires. The tapered blades of push-in connectors are designed to spread open when conductors are inserted in a manner in which they will clamp onto and secure the conductor, preventing it from being removed. As such, these types of push-in connectors are single use connectors. Once wires are installed, they cannot be removed without damaging the connector or the wires.



1 32. All the connectors used in the LHC products are push-in connectors,
2 not twist connectors. The connector in the Accused Products that attaches the
3 output wires of the junction box to the housing (as required by the claims) is the
4 type of connector shown and described above. It is my opinion that a person of
5 ordinary skill in the art would not confuse a push-in connector with a twist
6 connector as they are visually distinct and operate on entirely different principles.

7 33. Both twist connectors and push connectors have been available for
8 years, long before the alleged 2018 priority date of Plaintiff's patent.

9 I declare under penalty of perjury that the foregoing is true and correct.

10
11 Dated: June 7, 2024


Dr. Eric Bretschneider